



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,844	07/24/2003	Munetaka Takahashi	055652-0102	8934
22428	7590	09/08/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			GREENE JR, DANIEL LAWSON	
			ART UNIT	PAPER NUMBER
			3641	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,844

Applicant(s)

TAKAHASHI, MUNETAKA

Examiner

Daniel L Greene Jr.

Art Unit

3641

MG

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

In order to claim priority under 35 U.S.C. 119 based upon a previously filed application, specific reference to the earlier filed application must be made in the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet. Appropriate correction is required.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application for numerous reasons including; the view numbers (e.g. FIG 1.) must be larger than the numbers used for reference characters, figures 5 and 6 are claimed as prior art, however not labeled as such, etc. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The attempt to incorporate subject matter into this application by reference to Japanese Patent Application No. 2002-219562 is improper because the entire content of the Japanese Application prosecution process is not applicable in its entirety to the instant application. It is recommended to remove the word "entire" from the statement "...the entire content of which is incorporated herein by reference." From the last paragraph on page 21 of the specification.

4. The disclosure is objected to because of the following informalities:

- A. Page 2, 2nd paragraph, line 4, "...the reactor containment vessel 1." was previously disclosed as "...the reactor containment vessel 2."
- B. Page 6, line 7, the support floor 31 over the main steam pipes is disclosed as support floor 32 in Fig. 6
- C. Page 6, line 8, the support floor 33 over the main steam pipes is disclosed as support floor 31 in Fig. 6

- D. Page 8, 1st line, the words "view" and "the" are miss-spelled.
- E. Page 9, 2nd paragraph, 5th line "the reactor pressure vessel 1." was previously disclosed as "...the reactor containment vessel 2."
- F. Page 15, last paragraph, first line, "In Figure 2" should read "In Figure 3" since Figure 2 does not disclose a dot dash line.
- G. Page 16, 1st line, the word "vessel" is miss-spelled.

Appropriate correction is required.

Claim Objections

5. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim (e.g. claim 11), which depends from a dependent claim should not be separated by any claim, which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

6. Claims 2, 10 and 11 are objected to because of the following informalities:

- A. With regard to claim 2, last line the word "the" is miss-spelled.
- B. Claim 10 includes idiomatic English (e.g. line 11 "and" and line 14 "...substantially same level" may read "...substantially the same level")
- C. With regard to claim 11, in the second to last line the word "shape" is miss-spelled.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 1-11 rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

With regard to Claim 1, see the last paragraph.

With regard to Claim 2, see the last sentence, in addition this claim is indefinite in defining which direction the axis are disposed, i.e. horizontal or vertical.

With regard to Claim 3, see the last paragraph.

Claims 4-7 and 11 are vague and indefinite due to their dependency on claim 1.

Claim 10 contains idiomatic errors, for examples see lines 11, and 14.

Claim 1 recites the limitation "a first side" in the third paragraph, "a second side" and "the distance" in the last paragraph. There is insufficient antecedent basis for these limitations in the claim.

Claim 2 recites the limitation "the first direction" in the second paragraph. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the distance on the second side" in the last paragraph. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,149,492 to Arai et al. hereafter Arai.

Arai discloses a reactor containment vessel (1) of a boiling water reactor configured to contain a reactor pressure vessel (3), the reactor pressure vessel (3) being connected to at least one main steam pipe (7) which penetrates the reactor containment vessel (1) at a main-steam-line penetration point (12A), wherein; the reactor containment vessel (1) has a first side and a second side which is opposite to the first side; the main-steam-line penetration point is disposed on a first side of the reactor containment vessel (1); and distance between the outer surface of the reactor pressure vessel (3) and the inner surface of the reactor containment vessel (1) on the first side is longer than the distance between the outer surface of the reactor pressure vessel (3) and the inner surface of the reactor containment vessel (1) the on a second side, in Figures 1, 2, 4 and 5.

9. Claim 10 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,353,651 B1 to Gou et al. hereafter Gou.

Gou discloses a reactor containment vessel (22) of a boiling water reactor configured to contain a reactor pressure vessel (12), the reactor pressure vessel (12) being connected to at least one main steam pipe (36) and at least one feed water pipe (34); wherein: the reactor containment vessel (22) has a main-steam-line penetration point and a feed-water-line penetration point: the main steam pipe penetrates the reactor containment vessel at a main-steam-line penetration point; the feed water pipe penetrates the reactor containment vessel at a feed-water-line penetration point; and the main-steam-line penetration point and the feed-water-line penetration point are arranged at substantially the same level, in Figure 1 and column 2, lines 38-46 and 57-59.

10. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,761,260 to Schmitt et al. hereafter Schmitt.

Schmitt discloses a reactor containment vessel (1) configured to contain a reactor pressure vessel, the reactor pressure vessel being connected to at least one main steam pipe (25) which penetrates the reactor containment vessel (1) at a main-steam-line penetration point, wherein; the reactor containment vessel (1) has a first side and a second side which is opposite to the first side; the main-steam-line penetration point is disposed on a first side of the reactor containment vessel (1); and the distance between the outer surface of the reactor pressure vessel and the inner surface of the reactor containment vessel (1) on said first side is longer than the distance between the

outer surface of the reactor pressure vessel and the inner surface of the reactor containment vessel (1) on said second side, in Figures 2, 3, and 4, column 1 lines 9-11, column 2 lines 43-46 and 62+, and column 3 lines 5-6, 18-20 and 66-67.

With regard to claim 11, Schmitt clearly discloses in Figure 3, that the reactor pressure vessel has a first circular horizontal cross-sectional shape and the reactor containment vessel has a second circular horizontal cross-sectional shape, which eccentrically surrounds the first circular horizontal cross-sectional shape.

Note also that statements as to possible future acts or to what the reactor containment vessel may enclose are essentially method limitations or statements of intended or desired use and do not serve to patentably distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 152 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

See MPEP 2114, which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647

Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than functions. *In re Danly*, 120 USPQ 528, 531

Apparatus claims cover what a device is, not what a device does. *Hewlett-Packard Co. v Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim. In this regard the reactor containment

vessel of Schmitt is inherently capable of being used for a boiling water reactor, as this is no more than conventionally known uses for structures, designs and shapes available within the art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3,7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's own admission of prior art Figures 5 and 6 in view of either the 1964 Proceedings of the Third International Conference on the Peaceful Uses of Atomic Energy or Small and Medium Power Reactors Vol. 1, pages 78, and 330-333 published 1961.

Applicants own admission of prior art figures 5 and 6 disclose a reactor containment vessel (2) configured to contain a reactor pressure vessel (1) connected to at least one main steam pipe (4) which penetrates the reactor containment vessel (2) at a main-steam-line penetration point (8) wherein; the reactor containment vessel (2) has a first side and a second side which is opposite to the first side; the main-steam-line penetration point is disposed on a first side of the reactor containment vessel (1);

Prior art figures 5 and 6 do not disclose that the distance between the outer surface of the reactor pressure vessel (3) and the inner surface of the reactor containment vessel (1) on the first side is longer than the distance between the outer

surface of the reactor pressure vessel (3) and the inner surface of the reactor containment vessel (1) the on a second side, i.e. that the reactor is offset in a particular direction.

It is old and well known as shown by Figure 3 and described (see second column, section labeled "Pressure suppression containment") in the 1964 Proceedings of the Third International Conference on the Peaceful Uses of Atomic Energy pages 362 and 363, and Small and Medium Power Reactors Vol. 1, pages 78, and 330-333 published 1961 to alter the arrangement of various components of the system for a variety of reasons.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to alter the location of the reactor pressure vessel of the system shown in prior art Figures 5 and 6 to gain the advantages therefrom (i.e. increasing spatial access for maintenance on the main steam isolation valves) as such results are in no more than the use of conventionally known maintenance practices/designs/techniques/layouts available within the art.

With regard to claim 2, it would have been obvious at the time the invention was made, to alter the shape of the reactor containment vessel to a non-circular horizontal cross-sectional shape in order to gain the advantages thereof (i.e. allowing the reactor containment vessel to be installed immediately adjacent to two existing oil-fired units) as such results are in no more than the use of conventionally known shapes, designs and layouts available within the art in the rejection of corresponding parts above.

With regard to claim 3, it would have been obvious at the time the invention was made, that rearranging the various components within the reactor containment vessel would also affect the relationships and locations of other components. As explained above, it is apparent on the face that when moving the reactor pressure vessel, the thickness of one side of the suppression pool must inherently be made smaller, while the other side is made larger, in order to maintain the total volume of said suppression pool in the rejection of corresponding parts above.

In regard to Claim 7, admitted prior art figure 6 further discloses an access tunnel (13) penetrating the suppression pool, wherein the access tunnel is able to communicate between the lower drywell and the outside of the reactor containment vessel on the second side of the reactor containment vessel in the rejection of corresponding parts above.

In regard to claim 9, admitted prior art figure 6 further discloses a fuel storage pool (16) disposed on the second side of the reactor containment vessel in the rejection of corresponding parts above.

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's own admission of prior art Figures 5 and 6 as modified above and further in view of U.S. Patent 3,715,270 to Jackson.

Prior art figures 5 and 6 as modified above disclose the invention substantially as claimed, however they do not disclose a non-circular horizontal cross-sectional shape.

Jackson discloses a reactor containment vessel with a non-circular horizontal cross-sectional shape in Figures 2 and 3.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to change the shape of the reactor containment vessel of the system shown in prior art Figures 5 and 6 to gain the advantages therefrom (i.e. cost reduction by reducing size and promoting compact design) as such results are in no more than a design choice of the conventionally known designs and shapes available within the art.

As previously explained above the reactor containment vessel of Jackson is inherently capable of being used for a boiling water reactor, as this is no more than conventionally known uses for structures, designs and shapes available within the art.

13. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's own admission prior art Figures 5 and 6 as modified above and further in view of U.S. Patent 4,687,625 to Hasegawa et al. hereafter Hasegawa

Prior art figures 5 and 6 as previously modified above disclose the invention substantially as claimed, however they do not disclose an air conditioner for the reactor containment vessel disposed outside of said reactor containment vessel.

Hasegawa teaches that it is known to have an air conditioner outside of the reactor containment vessel and the air conditioner ventilation piping (duct) to have an isolation valve in column 1 lines 22-27, column 5 lines 42+ and column 6 lines 1-6.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to locate the air conditioner for the reactor containment vessel outside of the reactor containment vessel and for the air conditioner duct to include an isolation valve to gain the advantages therefrom (i.e. minimizing costs by minimizing size of the reactor containment vessel by moving components outside of said reactor containment

vessel) as such results are in no more than a rearrangement of parts of the conventionally known designs and locations of components available within the art. See *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *Ex parte Chicago Rawhide MFG. Co.*, 223 USPQ 351, 353 (Bd. Pat. App & Inter. 1985)

In regard to claim 6, Hasegawa further discloses that the feed-water-line penetration point and the main-steam-line penetration point are arranged substantially in the same level in Figures 1,2 and 6, column 3 lines 27-39, column 4 lines 21-27, column 5 lines 42+ and column 6 lines 1-6.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to locate the feed-water-line penetration point and the main-steam-line penetration point are arranged substantially in the same level to gain the advantages therefrom (i.e. minimize costs by utilizing one isolating vessel for multiple penetrations) as such results are in no more than a rearrangement of parts of the conventionally known designs and locations of components available within the art. See *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *Ex parte Chicago Rawhide MFG. Co.*, 223 USPQ 351, 353 (Bd. Pat. App & Inter. 1985)

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's own admission of prior art Figures 5 and 6 as modified above and further in view of Arai.

The prior art figures 5 and 6 as modified above disclose the invention substantially as claimed. However they do not disclose a plurality of vent pipes

communicating the upper drywell and the wet well distributed biased to the first side of the reactor.

Arai discloses the invention substantially as claimed and explained above as well as distributing the vent pipe (8) to the first side of the reactor.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to distribute the vent pipes biased towards the side with the larger volume of water to gain the advantages therefrom (i.e. maximize exposure to the largest source of cooling water) as such results are in no more than a rearrangement of parts of the conventionally known designs and locations of components available within the art.

See *In re Japikse*, 181 F.2d 1019 86 USPQ 70 (CCPA 1950) and *Ex parte Chicago Rawhide MFG. Co.*, 223 USPQ 351, 353 (Bd. Pat. App & Inter. 1985)

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as showing the old and well-known and current state of the art in the shapes/designs/technology of reactor containment vessels and arrangements of parts therein.

16. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims below for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the

responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L Greene Jr. whose telephone number is (703) 605-1210. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIG 9/3/2004



MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER